BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 94-005-E - ORDER NO. 94-458

MAY 23, 1994

IN RE: Adjustment of Base Rates for Fuel Costs for Duke Power Company	)	ORDER APPROVING BASE RATES FOR FUEL COSTS

On May 17, 1994, the Public Service Commission of South Carolina (the Commission) held a public hearing on the issue of the recovery of the costs of fuel used in electric generation by Duke Power Company (the Company) to provide service to its South Carolina retail electric customers. The procedure followed by the Commission is set forth in S.C. Code Ann., §58-27-865 (1976, as amended). The review in this case is from December, 1993 through May, 1994.

At the public hearing, William F. Austin, Esq., Richard Whitt, Esq. and Mary Lynne Grigg, Esq. represented the Company; Nancy Vaughn Coombs, Esquire, represented the Intervenor, the Consumer Advocate of South Carolina; and F. David Butler, General Counsel, represented the Commission Staff. The record before the Commission consists of the testimony of two witnesses on behalf of the Company, three witnesses on behalf of the Commission Staff, and five hearing exhibits.

Based upon the evidence of the record, the Commission makes

the following findings of fact and conclusions of law:

FINDINGS OF FACT

1. The record of this proceeding indicates that for the period from October 1993 through March 1994 the Company's actual total fuel costs for its electric operations amounted to $338,130,735. Hearing Exhibit No. 4, Accounting Exhibit E.

2. Staff reviewed and compiled a percentage generation mix statistic sheet for the Company's fossil, nuclear and hydraulic plants for October 1993 through March 1994. The fossil generation ranged from a high of 48% in January to a low of 24% in March. The nuclear generation ranged from a high of 73% in March to a low of 50% in January. The percentage of generation by hydro ranged from 0% to 3% for this period. Hearing Exhibit No. 5, Electric Department Exhibit No. 3.

3. During the October 1993 through March 1994 period, coal suppliers delivered 6,553,699 tons of coal. The Commission Staff's audit of the Company's actual fuel procurement activities demonstrated that the average monthly received cost of contract coal varied from $42.18 per ton in March 1994 to $43.66 per ton in October. Hearing Exhibit No. 4, Accounting Exhibit A.

4. According to Company witness William R. Stimart, the performance of the Company's nuclear units equals or exceeds that of comparable facilities as demonstrated thusly:

Duke system actual capacity factors		
October 1993 - March 1994	82%	2 units refueled
April 1993 - September 1993	75%	4 units refueled
12 months ended March 1994	79%	
Calendar 1993	78%	
National average capacity factors		
NERC data for PWR's		
Calendar years 1992 and 1991	74%	
5 year 1988 - 1992	70%	

5. Staff collected and reviewed certain generation statistics of major Company plants for the six months ending March 31, 1992. Hearing Exhibit No. 5, Electric Department Exhibit 4. The nuclear fueled McGuire Plant was lowest at 0.47 cents per kilowatt-hour. The highest amount of generation was 9,519,895 megawatt-hours produced at the Oconee station.

6. The Commission Staff conducted an extensive review and audit of the Company's fuel purchasing practices and procedures for the subject period. The Staff's accounting witness, Jacqueline R. Cherry, testified that the Company's fuel costs were supported by the Company's books and records. Testimony of Cherry; Hearing Exhibit No. 4, Accounting Department Exhibits.

7. The Commission recognizes that the approval of the currently effective methodology for recognition of the Company's fuel costs requires the use of anticipated or projected costs of fuel. The Commission further recognizes the fact inherent in the utilization of a projected average fuel cost for the establishment

of the fuel component in the Company's base rates that variations between the actual costs of fuel and projected costs of fuel would occur during the period and would likely exist at the conclusion of the period. Section 58-27-865, supra, establishes a procedure whereby the difference between the base rate fuel charges and the actual fuel costs would be accounted for by booking through deferred fuel expenses with a corresponding debit or credit.

8. The record of this proceeding indicates that the comparison of the Company's fuel revenues and expenses for the period October 1993 through March 1994 produces an over-recovery of $4,193,361 through March 1994. Cherry testimony, p. 3.

9. The Company's projected average fuel expense for the June 1994 through November 1994 period is 1.1365 cents per KWH. However, when adjusted by the cumulative variance of fuel cost recovery, the adjusted fuel costs are 1.1038 cents per KWH. Stimart testimony, p. 11.

10. Company witness Stimart proposed that the fuel component in base rates of 1.00 cent/KWH be continued effective June, 1994. Stimart testimony, p. 11.

11. Staff witness Watts testified that using the currently projected sales and fuel cost figures through March 1994, and a projected cumulative over-recovery of $3,343,378 through May, 1994, the average projected fuel expense is approximately 1.1032¢/KWH for the six months ending November, 1994. The currently approved base fuel factor is 1.0000¢/KWH. If the base fuel component is set at 1.0000¢/KWH for this period, it will produce an estimated

under-recovery of $10,561,086. Testimony of Watts, p. 4; Hearing Exhibit No. 5, Electric Department Exhibit 10.

12. Staff proposed this fuel factor of 1.0000¢/KWH so that fluctuations in the fuel factor will be minimized. This recommendation will further maintain rate stability and maintain a relative balance between actual and projected fuel costs and sales.

13. During the period under review, Oconee Unit 3, McGuire Unit 2[1] and Catawba Unit 1 were down for refueling during some portion of the time. Other scheduled and/or forced outages occurred during this time frame at these and the Company's other nuclear units. All outages were reviewed by Staff (Hearing Exhibit No. 5, Electric Department Exhibit 2A) and a determination was made by Staff as to the prudence of the outages. Staff did not recommend that the resulting excess fuel replacement costs be disallowed, because of the nature of the outages.

REFUELING OUTAGES

14. Commission Staff witness Walsh testified that McGuire Unit No. 2 entered a refueling outage on July 1, 1993 and ended on September 14, 1993. This refueling outage lasted for approximately 75 days. The refueling outage had a planned duration of 75 days including five days of contingency. According to Walsh, Duke Power Company's performance during this refueling was exceptional

1. Included in this review is an outage at McGuire Unit 2 which commenced on July 1, 1993, during the Company's last fuel review period in Docket No. 93-006-E. The Commission ruled in Order No. 93-1096 that the July McGuire 2 outage would be reviewed in Duke's Spring 1994, fuel proceeding.

considering the tremendous scope of the outage. In addition, this refueling was completed below the projected cost of O & M and Capital Expenditures.

Walsh also stated that Catawba Unit No. 1 entered a refueling outage on October 29, 1993 and ended the refueling on January 1, 1994. This refueling outage lasted approximately 62 days. The refueling outage had a planned duration including contingency time, of 67 days.

OTHER OUTAGES

15. Walsh further stated that McGuire Unit No. 1 experienced three outages during the review period. These outages had durations of 57, 33, and 1 day. On August 22, 1993, Duke began an outage at McGuire Unit No. 1 which ended on October 18, 1993. This outage was the result of the need to identify and plug primary to secondary tube leaks in the steam generator. Additional emergent work was performed concerning a seal failure in the volume control pump. The second outage at McGuire Unit No. 1 began on January 23, 1994 and extended for 33 days until February 25, 1994. This outage was the result of continued leakage associated with the steam generator tubing. The last outage involving McGuire Unit No. 1 was for approximately one day beginning on November 6, 1993. This outage was the result of equipment failure involving a solenoid valve.

McGuire Unit No. 2 experienced two outages during the review period. These outages had durations of 18 and 10 days. McGuire Unit No. 2 began an outage on September 27, 1993 for an 18 day

period ending October 15, 1993. This outage resulted from a leakage problem in the reactor coolant system. Duke had planned an outage in early October to inspect the steam generator tube sleeves as a result of the concerns found during the McGuire Unit No. 1 review. During this outage, numerous plugs were installed and the unit was then returned to service.

McGuire Unit No. 2 then experienced a loss of offsite power on December 27, 1993 which resulted in a ten day outage ending on January 7, 1994. This outage occurred when an electrical insulator in the switchyard failed. This resulted in only one of the two paths feeding the switchyard being operational. The main generator failed to runback which resulted in an overcurrent in the remaining path to the switchyard. Staff has analyzed this outage and determined the equipment failure involving the insulators and a circuit card where the root causes of this outage.

Also, Catawba Unit No. 1, following its return to service from refueling on January 1, 1994 experienced one brief outage on January 11, 1993. This outage was the result of a main turbine trip on low condenser vacuum. This low vacuum was the result of an equipment failure due to the shearing of an extraction line. This unit was down for approximately one and a half days and then returned to service.

Catawba Unit No. 2 experienced one brief outage beginning on January 12, 1994 and ending on January 13, 1994. This outage was the result of a turbine trip due to low condenser vacuum.

16. Neither witness Watts nor Walsh recommended that the

excess fuel expenses discussed in their testimony be disallowed. Both witnesses considered the Company's fuel costs in light of S.C. Code Ann. §58-27-865(E)(1976, as amended).

In the ruling of the Supreme Court on South Carolina in Hamm v. Public Service Commission and Carolina Power & Light Company, 291 S.C. 178, 352 S.E.2d 476 (1987), it states, "The rule does not require the utility to show that its conduct was free from human error; rather, it must show that it took reasonable steps to safeguard against error." Staff has testified that the Company has met this criteria to take reasonable steps to safeguard against human error associated with our examination of the outages that were reviewed for this proceeding. Specifically the Company's nuclear units operated at an overall average capacity factor of 82% for the period, ranging from a low of approximately 74% in February to a high of 96% in March 1994.

MOTION BY CONSUMER ADVOCATE

17. At the conclusion of the hearing, counsel for the Consumer Advocate moved that the Commission disallow all of the excess fuel replacement costs associated with the McGuire outages due to tube leaks, or in the alternative, hold the matter in abeyance until such time as the terms of the Westinghouse settlement are considered by the Commission. The testimony showed that Duke had settled a lawsuit against Westinghouse, the manufacturer of the generators in question. The suit included allegations about defective tubing in the generators. The settlement included, inter alia, credits for future purchases and

some cash payments.

CONCLUSIONS OF LAW

1. Pursuant to S.C. Code Ann.,§58-27-865(A)(Cum. Supp. 1991), each electrical utility must submit to the Commission its estimated fuel costs for the next six (6) months. Following an investigation of these estimates and after a public hearing, the Commission directs each electrical utility "to place in effect in its base rate an amount designed to recover, during the succeeding six months, the fuel costs determined by the Commission to be appropriate for that period, adjusted for the over-recovery or under-recovery from the preceding six-month period." Id.

2. S.C. Code Ann., Section 58-27-865(F)(Cum. Supp. 1991) requires the Commission to allow electrical utilities to recover "all their prudently incurred fuel costs... in a manner that tends to assure public confidence and minimize abrupt changes in charges to consumers."

3. S.C. Code Ann., Section 58-27-865(E)(Cum. Supp. 1991) specifies as follows:

> The Commission shall disallow recovery of any fuel costs that it finds without just cause to be the result of failure of the utility to make every reasonable effort to minimize fuel costs or any decision of the utility resulting in unreasonable fuel costs, giving due regard to reliability of service, economical generation mix, generating experience of comparable facilities, and minimization of the total cost of providing service.

4. As stated by the Supreme Court in Hamm v. South Carolina Public Service Commission, Supra, Section 58-27-865(E) requires the Commission "to evaluate the conduct of the utility in making the

decisions which resulted in the higher fuel costs. If the utility has acted unreasonably, and higher fuel costs are incurred as a result, the utility should not be permitted to pass along the higher fuel costs to its customers." "[T]he rule does not require the utility to show that its conduct was free from human error; rather it must show it took reasonable steps to safeguard against error." Id. at 478, citing Virginia Electric and Power Co. v. The Division of Consumer Council, 220 Va. 930, 265 S.E.2d 697 (1980).

5. The Commission recognizes that Section 58-27-865(E) provides it with the authority to consider the electrical utility's reliability of service, its economical generation mix, the generating experience of comparable facilities, and its minimization of the total cost of providing service in determining to disallow the recovery of any fuel costs.

6. The major advantage of producing electricity by nuclear power is the relatively low fuel costs for nuclear fuel generating facilities. The cost of generation of electricity is generally composed of costs such as capital, interest, taxes, insurance, operating and maintenance (O&M) costs, and fuel costs. For fossil fueled plants, the cost of the fuel is a larger portion of the total cost to generate electricity. For nuclear power plants, while the capital and O&M costs are higher compared to fossil fueled plants, the fuel costs are comparatively low. Thus, if the electricity generated by nuclear plants must be replaced by electricity from a coal or gas fired plant, the Company incurs higher fuel costs. This difference between the fuel costs to

generate a quantity of electricity by fossil fuel and the fuel costs to generate the electricity by nuclear fuel is the excess replacement fuel cost.

7. The Commission finds that for the period under review, Duke's overall plant performance was superior. Further, the Commission concludes that it would be improper to prohibit the Company from recovering its fuel costs associated with the outages, since we believe that the Company acted prudently in all cases, considering the statutory objectives stated in §58-27-865.

8. The Commission concludes that its decision to allow Duke to recover these costs is supported by the substantial evidence of record.

9. After considering the directives of §58-27-865(A) and (F) which require the Commission to place in effect a base fuel cost which allows the Company to recover its fuel costs for the next six months adjusted for the over-recovery or under-recovery from the preceding six month period, in a manner which assures public confidence and minimizes abrupt changes in charges, the Commission has determined that the appropriate base fuel factor for June 1994 through November 1994 is 1.0000¢/KWH. The Commission finds that a 1.0000¢ fuel component will allow Duke to recover its appropriate fuel costs and, at the same time, prevent abrupt changes in charges to Duke's customers.

10. The Commission has determined that the Consumer Advocate's Motion to disallow the excess fuel replacement cost should be denied. We do not think that the excess fuel replacement

costs are the fault of the Company. We do, however, agree that Duke's customers should get the benefit of the Company's settlement with Westinghouse. Accordingly, we hereby direct the Company to disclose within one year of the date of this Order, the contents of the settlement with Westinghouse, along with the intended method to provide South Carolina retail customers with the appropriate portion of the settlement proceeds. We do recognize that the terms of the settlement are, at present, confidential. If the terms are still confidential in one year, we direct the parties to attempt to establish appropriate conditions under which the objective stated above may be carried out, while preserving the necessary confidentiality. If the parties cannot agree on a proper procedure, then this Commission will establish it.

IT IS THEREFORE ORDERED THAT:

1. The base fuel factor for the period June 1994 through November 1994 is set at 1.0000¢/KWH.

2. Within ten (10) days of the date of this Order, Duke Power Company shall file with the Commission, rate schedules designed to incorporate the findings herein, and an adjustment for fuel costs as demonstrated by Appendix A.

3. That the Company comply with the notice requirements set forth in S.C. Code Ann.,§58-27-865(A) (Cum. Supp. 1991).

4. That the Company continue to file the monthly reports previously required.

5. That the Company account monthly to the Commission for the differences between the recovery of fuel costs through base

rates and the actual fuel costs experienced by booking the difference to unbilled revenues with a corresponding deferred debit or credit.

6. That the Company submit monthly reports to the Commission of fuel cost and scheduled and unscheduled outages of generating units with a capacity of 100 MW or greater.

7. That the Company shall disclose within one year of the date of this Order the terms of its settlement with Westinghouse, along with the Company's intended method to provide South Carolina retail customers with the appropriate portion of the settlement proceeds.

8. That the Consumer Advocate's Motion is denied.

9. That this Order shall remain in full force and effect until further Order of the Commission.

BY ORDER OF THE COMMISSION:

Chairman

ATTEST:

Executive Director

(SEAL)

Appendix A
Docket No. 94-005-E
Order No. 94-458
May 23, 1994

DUKE POWER COMPANY
Adjustment for Fuel Costs

APPLICABILITY

This adjustment is applicable to and is a part of the Utility's South Carolina retail electric rate schedules.

The Public Service Commission has determined that the costs of fuel in an amount to the nearest one-thousandth of a cent, as determined by the following formula, will be included in the base rates to the extent determined reasonable and proper by the Commission for the succeeding six months or shorter period:

$$F = \frac{E}{S} + \frac{G}{S_1}$$

Where:

F= Fuel cost per Kilowatt-hour included in base rate, rounded to the nearest one-thousandth of a cent.

E= Total projected system fuel costs:

(A) Fuel consumed in the Utility's own plants and the Utility's share of fuel consumed in jointly owned or leased plants. The cost of fossil fuel shall include no items other than those listed in Account 151 of the Commission's Uniform System of Accounts for Public Utilities and Licensees. The cost of nuclear fuel shall be that as shown in Account 518 excluding rental payments on leased nuclear fuel and except that, if Account 518 also contains any expense for fossil fuel which has already been included in the cost of fossil fuel, it shall be deducted from this account.

PLUS

(B) Purchased power fuel costs such as those incurred in unit power and Limited Term power purchases where the fuel costs associated with energy purchased are identifiable and are identified in the billing statement.

PLUS

(C) Interchange power fuel costs such as Short Term, Economy, and other where the energy is purchased on economic dispatch basis.

Energy receipts that do not involve money payments such as Diversity energy and payback of storage energy are not defined as purchased or interchange power relative to this fuel calculation.

MINUS

(D) The cost of fuel recovered through intersystem sales including the fuel costs related to economy energy sales and other energy sold on an economic dispatch basis.

Energy deliveries that do not involve billing transactions such as Diversity energy and payback of storage are not defined as sales relative to this fuel calculation.

S = Projected system kilowatt-hour sales excluding any intersystem sales.

G = Cumulative difference between jurisdictional fuel revenues billed and fuel expenses at the end of the month preceding the projected period utilized in E and S.

S_1 = Projected jurisdictional kilowatt-hour sales for the period covered by the fuel costs included in E.

The appropriate revenue related tax factor is to be included in these calculations.

The fuel cost (F) as determined by Public Service Commission of South Carolina Order No. 94-458 for the period June 1994 through November 1994 is 1.000 cent per kilowatt-hour.